

Appl. No. 10/665,173 of Changaris et al.
Atty. Dkt. No. ZB999/04005

REMARKS

Claim 2 has been amended to reflect its dependency on claim 1, rather than on claim 2 as originally filed. Claim 11 has been amended to correct a typographical error, as required by the instant office action.

Objections To The Claims

Claim 11 stands objected to because at lines 12 and 13, the phrase "falls below said flash lamp self-extinguishing voltage" has been included in conjunction with the voltage detection circuit. The applicant has concluded that the aforementioned phrase was included pursuant to a typographical error. Accordingly, claim 11 has been amended to delete this phrase, as requested by the Examiner.

Rejections Under 35 U.S.C. § 102(b)

Claims 1, 3-5, and 11 stand rejected under 35 USC 102(b) as being anticipated by U.S. Patent No. 5,886,620 to Stewart et al. (hereinafter Stewart or '620). Specifically, regarding claims 1 the Examiner has cited Stewart as disclosing a circuit (an alarm strobe circuit) for providing a method of repetitively firing a flash lamp (a flash tube DS1) comprising: a) providing a power supply (via power line 18,20) having a periodic voltage signal, the signal having a component where the voltage signal is less than the flash lamp self extinguishing voltage (i.e., 250 volts), the signal component also being longer than the flash lamp discharge time (Figs. 1,2; and col. 3, lines 44-60); b) providing a means for storing energy (i.e., capacitor C5), the energy storage means being connected across the electrodes of the flash lamp and across the power supply; c) charging the energy storage means (capacitor C5) with the power supply voltage signal (col. 3, lines 20-32); d) firing the flash lamp when the power supply voltage signal is less

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than the flash lamp self-extinguishing voltage (col. 3, lines 20-32) and repeating the firing steps (col. 3 lines 8-65). Applicant hereby traverses the Examiner's rejection of claim 1 for the following reasons.

In order for a claim to be anticipated by a reference under 35 U.S.C§102(b) that reference must teach or disclose each and every limitation of the claim being rejected. Applicant's claim 1 claims a method of repetitively firing a flash lamp having a self-extinguishing voltage and a discharge time that includes the limitation of "firing said flash lamp when said power supply voltage signal is less than said flash lamp self-extinguishing voltage and at a time such that said flash lamp de-ionizes while said power supply voltage signal remains below said self extinguishing voltage;" It is asserted in the instant office action that Stewart teaches this limitation of claim 1 at column 3 lines 20-32, which states:

Capacitor C5 is charged in incremental steps with a rapid series of current pulses applied through diode D1. To generate those current pulses, a UC3843A pulse width modulator is used in an oscillator circuit. The oscillating output of the pulse width modulator is applied through resistor R4 to switch Q1. Zener diode D2 serves to limit the voltage output of the pulse width modulator. When Q1 turns on, current is drawn through the inductor L1. The output of the modulator goes low when a predetermined voltage is sensed across resistor R5 through resistor R1 and capacitor C1. When Q1 is then switched off, the collapsing field from inductor L1 drives a large transient current through diode D1 to incrementally charge C5.

Initially, applicant notes that this portion of the '620 disclosure omits any discussion of the firing of the flash lamp as required by applicant's claim 1, but merely

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details the charging of a capacitor using a pulsed current circuit construction. However, at lines 44-60 of column 3 of the '620 reference, it is disclosed that capacitor C5 is discharged; and thus the flash lamp strobed on, responsive to a drop in a voltage signal across lines 18 and 20 to zero, which may occur for ten milliseconds every 2.4 seconds. While zero electrical potential is below the self-extinguishing voltage of a flash lamp, applicants' claim 1 requires the flash lamp to be fired when the power supply voltage signal is both less than the flash lamp self-extinguishing voltage and at a time such that said flash lamp de-ionizes while the power supply voltage signal remains below the self-extinguishing voltage. The limitation requiring the power supply voltage signal to remain below the self-extinguishing voltage for the lamp to be fired is not taught or disclosed in the '620 reference.

In fact, there is no disclosure or teaching of self-extinguishing voltages or the desirability of permitting the flash lamp to de-ionize prior to firing it again in the '620 reference; only discharge voltages for flash lamps are mentioned. (See '620 at col. 1 lines 26-37). In the rejection of claim 1, the instant office action states (on page 2) that the self-extinguishing voltage as disclosed in the '620 reference is 250 volts. However, this is simply the discharge voltage of the lamp being discussed therein. The purpose of the limitation of applicant's claim 1 that requires the lamp to be fired while the power supply voltage signal remains below the self-extinguishing voltage of the lamp being used is to prohibit "afterglow" or continuous current flow through the gas medium of the flash lamp, thereby preventing overheating and its deleterious effects on the lamp. The '620 reference has no teaching or disclosure of this limitation of claim 1 of the instant application, nor does the '620 reference seek to inhibit afterglow since the emergency

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lamps being strobed by the circuit taught in the '620 reference are designed to be fired at a very slow frequency.

Additionally, as seen in col. 3 lines 44-60 of the '620 reference, the circuit thereof simply fires or strobes a flash lamp responsive to a change in the supply voltage from some DC constant to zero volts. Thus claim 1 of the '620 reference includes the limitation that the firing circuit is "responsive to a pulsed change in voltage across the power lines". However, the method of applicant's claim 1 requires firing the flash lamp "when said power supply voltage signal is less than said flash lamp self extinguishing voltage . . .", not necessarily firing the lamp responsive to a pulsed change in voltage as required by the '620 reference.

Accordingly, since the limitation of claim 1 that firing said flash lamp when said power supply voltage signal is less than said flash lamp self-extinguishing voltage and at a time such that said flash lamp de-ionizes while said power supply voltage signal remains below said self extinguishing voltage is not taught or disclosed by Stewart, claim 1 can not be anticipated thereby under 35 U.S.C. § 102(b).

Claim 3 also stands rejected under 35 U.S.C. § 102(b) as being anticipated by Stewart. Specifically, the instant office action asserts that the Stewart reference discloses a means for detecting when the voltage of the periodic power supply signal falls below the flash lamp self-extinguishing voltage by equating that limitation with the '620 teaching of detecting when the voltage across the power line drops to zero. However, as discussed in some detail herein above, the Stewart reference teaches a circuit that simply awaits a zero (or near zero) signal from the power supply, thence discharges a capacitor (C5). (See Stewart at col. 3 lines 44-60). However, applicant's claim 3 requires a means

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for detecting a specified low voltage threshold, V_{se} , the flash lamp self-extinguishing voltage, rather than simply a firing circuit responsive to a pulsed voltage change, as taught by Stewart. Accordingly, claim 3 can not be anticipated by Stewart under 35 U.S.C. § 102(b), since Stewart neither teaches nor discloses a circuit that includes a means for detecting when the voltage of the periodic power supply falls below the flash lamp self-extinguishing voltage.

Additionally, since claim 4 is dependent from claim 3, and since claim 5 is dependent from claim 4, claims 4 and 5 can not be anticipated by Stewart under 35 U.S.C. § 102(b) for all the reasons set forth herein above.

Claim 11 also stands rejected under 35 U.S.C. § 102(b) as being anticipated by Stewart et al. However, for all the reasons set forth above with respect to independent claims 1 and 3, claim 11 can not be anticipated by Stewart under 35 U.S.C. § 102(b), since Stewart neither teaches nor discloses a voltage detection circuit operative to trigger the triggering circuit and thereby fire the flash lamp when the power supply periodic voltage signal falls below said flash lamp self-extinguishing voltage, as required by claim 11 of the instant application.

Applicant notes that claim 11 has been amended to correct a typographical error as required by the Examiner.


Applicant further notes that claims 8-10 stand allowed, and claims 2,6,7,12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant believes these claims to now be allowable in light of the remarks set forth herein above regarding the rejected base claims.

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Summary

Applicant has responded to each ground of rejection set forth in the instant office action and believes claims 1-13 to be in condition for allowance. Applicant believes no fee to be due with this correspondence. Applicant hereby courteously solicits the allowance of all claims and the prompt passage to issue of the instant application. If the Examiner believes there are other unresolved issues in this case, applicant's attorney would welcome a telephone call at (502) 584-1135 to discuss such remaining issues.

Respectfully submitted,



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